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U. S. Gov't Master Specification, No. 153

DEPARTMENT OF COMMERCE

BUREAU OF STANDARDS

George K. Burgess, Director

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# UNITED STATES GOVERNMENT MASTER SPECIFICATION FOR THE CONSTRUCTION OF BUILT-UP ROOFING, TYPE 5TCS

### FEDERAL SPECIFICATIONS BOARD, SPECIFICATION No. 153

**This specification was officially adopted by the Federal Specifications Board on June 1, 1924,, for the use of the Departments and Independent Establishments of the Government in the construction of built-up roofing, type 5TCS.**

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## I. TYPE

This roofing shall consist of five layers or plies of coal-tar saturated rag felt cemented together with coal-tar pitch and surfaced with slag, gravel, or similar surfacing materials, as called for in the proposal for the work.

Flashings of the type required under the specification for the building shall be included and shall conform to United States Government Master Specifications for Flashings No. 156 or No. 157.

## II. MATERIAL AND WORKMANSHIP

No details.

## III. GENERAL REQUIREMENTS

No details.

## IV. DETAIL REQUIREMENTS

### 1. MATERIALS

Roofing of type 5TCS shall contain not less than the following quantities of materials per 100 square feet:

| | Pounds |
|---|---|
| Five layers coal-tar saturated rag felt (F. S. B. Spec. No. 81) | 76 |
| Coal-tar pitch (F. S. B. Spec. No. 80) | 210 |
| Roofing gravel (F. S. B. Spec. No. 82) | 400 |
| or | |
| Roofing slag (F. S. B. Spec. No. 82) | 300 |

### 2. WORKMANSHIP

The coal-tar pitch shall not be heated above 375° F., and shall be hot when the felts are laid.

The sheets of felt shall be laid so as to be free from wrinkles and buckles and so that pronounced ridges are not formed at the laps.

When the roof surface is of gypsum, each sheet of felt shall be nailed at approximately 6 inches from its upper edge with nails driven through flat tinned disks.

The surfacing material shall always be dry when applied, and, in addition, shall be heated in cold weather.

Concrete and gypsum roof surfaces installed by other contractors, before being considered satisfactory for laying the roof covering, shall be smooth, firm, dry, and free from high spots, depressions, and all loose and foreign material. Precast concrete slabs shall be firmly set and well pointed.

### 3. APPLICATION

Roofing of type 5TCS shall be laid by either the shingle or by the two and three method. The shingle method is preferred and shall be used when no choice is specified.

(*a*) Shingle Method.—(1) Coat the roof slab uniformly with hot coal-tar pitch using not less than 40 pounds per 100 square feet.

(2) Over this coating of coal-tar pitch lay five layers of 32-inch coal-tar saturated felt over the entire roof, lapping each sheet 26 inches over the preceding sheet. Lap the ends of the sheets not less than 6 inches. When 36-inch felt is used, lap the sheets 29 inches. Mop each of these five sheets the full width of the lap with hot coal-tar pitch, using not less than 25 pounds per 100 square feet in each mopping. Cut off these layers of felt at abutting vertical surfaces.

(3) Over the entire surface apply a uniform coating of hot coal-tar pitch, using not less than 70 pounds per 100 square feet.

(4) Into this pitch, while hot, embed the surfacing material.

(*b*) Two and Three Method.—(1) Coat the roof slab uniformly with hot coal-tar pitch, using not less than 40 pounds per 100 square feet.

(2) Over this coating of coal-tar pitch lay two layers of 32-inch coal-tar saturated felt over the entire roof, lapping each sheet 17 inches over the preceding sheet. Lap the ends of the sheets not less than 4 inches. When 36-inch felt is used, lap the sheets 19 inches. Mop the full width of each lap with hot coal-tar pitch using not less than 25 pounds per 100 square feet in each mopping Cut off these layers of felt at abutting vertical surfaces.

(3) Mop the entire surface of this felt with a uniform coating of hot coal-tar pitch, using not less than 25 pounds per 100 square feet.

(4) Over this coating of coal-tar pitch, lay three additional layers of 32-inch coal-tar saturated felt over the entire roof, lapping each sheet 22 inches over the preceding sheet. Lap the ends of the sheets not less than 6 inches. When 36-inch felt is used, lap the sheets 24½ inches. Mop each of these three sheets the full width of the lap with hot coal-tar pitch, using not less than 25 pounds per 100 square feet in each mopping.

(5) Over the entire surface apply a uniform coating of hot coal-tar pitch, using not less than 70 pounds per 100 square feet.

(6) Into this pitch, while hot, embed the surfacing material.

## V. INSPECTION

No details.

## VI. PACKING AND MARKING

No details.

## VII. ADDITIONAL INFORMATION

Roofing of type 5TCS is adapted to concrete and poured gypsum surfaces which inclines not exceeding 1 inch to the foot and shall not be used on inclines greater than this.

Roofing constructed in the manner above specified is durable and and should not require repairs or renewals on account of the action of the elements for a period of 20 years. While the surface of this type of roofing will require some attention in about the same time as roofing of type 4TCS, if the roofing is allowed to stand without attention until complete failure, longer life can be expected of type 5TCS than from type 4TCS.

## VIII. GENERAL SPECIFICATIONS

No details.

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